

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁴ :	A1	(11) International Publication Number:	WO 89/10963
C12N 15/00, 1/00, 5/00		(43) International Publication Date:	16 November 1989 (16.11.89)
C12P 33/00, A61K 31/575			
(21) International Application Number:	PCT/NL89/00032	SMAAL, Eric, Bastiaan [NL/NL]; Doelenstraat 93, NL-2611 NS Delft (NL).	
(22) International Filing Date:	8 May 1989 (08.05.89)	(74) Agents: HUYGENS, Arthur, Victor et al.; Gist-Brocades N.V., Patents and Trade Marks Department, Wateringseweg 1, P.O. Box 1, NL-2600 MA Delft (NL).	
(30) Priority data:	88200904.6 6 May 1988 (06.05.88) EP	(81) Designated States: AU, DK, FI, HU, JP, KR, NO, US.	
	(34) Countries for which the regional or international application was filed: NL et al.	Published	
	88202080.3 23 September 1988 (23.09.88) EP	With international search report	
	(34) Countries for which the regional or international application was filed: NL et al.	Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.	
(71) Applicant (for all designated States except US): GIST-BROCADES N.V. [NL/NL]; Wateringseweg 1, P.O. Box 1, NL-2600 MA Delft (NL).			
(72) Inventors; and			
(75) Inventors/Applicants (for US only): SLIJKHUIS, Herman [NL/NL]; Zuidersingel 27, NL-2651 AR Berkel en Rodenrijs (NL). SELTEN, Gerardus, Cornelis, Maria [NL/NL]; Stertenweg 81, NL-2651 HZ Berkel en Rodenrijs (NL).			

(54) Title: PROCESS FOR THE BIOCHEMICAL OXIDATION OF STEROIDS AND GENETICALLY ENGINEERED CELLS TO BE USED THEREFOR

(57) Abstract

Genetically engineered host cells containing new expression cassettes are provided which are able to carry out biochemical oxidations of steroids. In particular the oxidation is carried out with cells into which DNA has been introduced which encodes protein involved in the biological pathway of cholesterol to hydrocortisone. Suited host cells comprise species of *Bacillus*, *Saccharomyces* or *Kluyveromyces*. The new host cells are suited for microbiological oxidations of cholesterol, pregnenolone, progesterone, 17 α -hydroxy-progesterone, and cortexolone, which are intermediates in said biological pathway. The new expression cassettes are also useful in the ultimate production of a multi-genic system for a one-step conversion of cholesterol into hydrocortisone.

